HD 268 .T47 C63

1986

TRENT WOODS CAMA LAND USE PLAN

JUL 1989



COASTAL AREA MANAGEMENT ACT

LAND USE PLAN

MAY, 1976

UPDATED JUNE, 1980

UPDATED DECEMBER, 1985

TOWN OF TRENT WOODS

P. O. BOX 188

NEW BERN, NORTH CAROLINA

28560

Trent Woods Town Board Adoption - January 9, 1986

N.C. Coastal Resources Commission Adoption - February 7, 1986

US Department of Commerce NOAA Coastal Services Center Library 2234 South Hobson Avenue Charleston, SC 29405-2413

Prepared with the assistance of Dexter G. Moore, Moore and Associates Urban Planners - Project Designers 3305 Winstead Road, Rocky Mount, N.C. 27801

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Town of Trent Moods

P. O. Box 188 912 Country Club Drive NEW BERN, N.C. 28560

MAYOR: LEROY H. PRICE

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COMMISSIONERS: DAVID L. CORDES CARROLL G. IPOCK, II J. DOUGLAS JONES CHIEF OF POLICE:

TOWN CLERK - TAX COLLECTOR DOROTHY H. HARRISON

January 11, 1986

Mr. Daniel V. Besse, Chairman Coastal Resources Commission P.O. Box 27687 Raleigh, North Carolina 27611

Dear Mr. Besse:

The Town of Trent Woods held a Public Hearing on January 9, 1986 for the purpose of considering the adoption of the 1985 Trent Woods CAMA Land Use Plan Update.

After a discussion of the proposed update, the Town Board of Commissioners unanimously adopted the update and authorized it to be submitted to the Coastal Resources Commission for certification. Please present this update to the Coastal Resources Commission for certification.

The Coastal Resources Commission staff was very helpful in the preparation of this update. Please express the town's appreciation to your staff for their assistance.

Sincerely,

Leroy H. Price Mayor

County of Craven

Board of Commissioners
George B. Nelson, Chairman
Gerald L. Anderson, Vice-Chairman
Grover C. Lancaster, Jr.
John B. Willis
W. J. Wynne, Jr.

Henry E. Dick, County Manager Tyler B. Harris, Clerk to Board James R. Sugg, County Attorney

June 17, 1980

Mr. George R. Scott, Chairman Trent Woods Planning Board P.O. Box 188 New Bern, North Carolina 28560

Dear Mr. Scott;

The Board of Commissioners for the County of Craven met in regular mid monthly session in the Commissioner's Room of the County Courthouse in the City of New Bern, North Carolina on June 16, 1980 at 2:00 p.m.

Commissioner Willis made the motion for the authorization of Trent Woods to handle the responsibility of operating its own CAMA Land Development Plan. Commissioner Lancaster seconded the motion, and it carried unanimously.

If we can be of further assistance, do not hesitate to call us.

Sincerely,

TYLER B. HARRIS, Clerk Board of Commissioners for the County of Craven

cc: Donald Baumgardner

TBH/kn

I. INTRODUCTION

PREFACE

The coastal areas of North Carolina provide a tremendous natural resource to the citizens of North Carolina. The area provides both recreational benefits and food production from our coastal waters. In some areas adjacent to our coastal waters, there is a danger that pollution from overdevelopment may significantly damage the food production capacity of nearby waters. This potential problem was the major reason that the Coastal Area Management Act was ratified by the North Carolina General Assembly in 1974. The purpose of the Coastal Area Management Act is "to insure the orderly balance of use and preservation of our coastal resources on behalf of the people of North Carolina and the nation." The Coastal Resources Commission was created to insure that the purpose of the state law is followed.

Land Use Plans have been developed by most local governments within the twenty coastal counties and are the administrative tools for carrying out the provisions of the law. These plans cannot survive unless they represent the views of local citizens. For this reason, the Coastal Resources Commission has required that a public participation program be the foundation of the Land Use Plan. The following is the Coastal Area Management Act Land Use Plan for the Town of Trent Woods.

TOWN OFFICIALS

Trent Woods Board of Commissioners

Leroy H. Price, Mayor

David L. Cordes

J. Douglas Jones

Carroll G. Ipock, II

Trent Woods Planning Board
George R. Scott, Chairman

DeWitt L. Darden

John G.Dunn

Stewart H. Smith

Dorothy H. Harrison, Town Clerk James Lee Davis, Town Attorney

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SUMMARY OF DATA COLLECTED

The Town of Trent Woods is located adjacent to the City of New Bern. Its existence is the result of the construction in 1922 of the New Bern Golf and Country Club. Originally a high income area, the Town's current population is largely middle income. However, the single family, low density residential development pattern has continued and as evidenced by the response received from the public participation program is still the desired development pattern. As a result of this public participation program, the Town Board has reaffirmed its development policy of encouraging only low density residential development, neighborhood commercial and supporting industrial development at other locations within Craven County. Currently, there is only one industry, a family-owned boat repair facility, and five commercial enterprises. Except for the few persons employed in these businesses, all others employed work outside of the Town of Trent Woods.

Few urban services are desired by the citizens of Trent Woods. Fire protection is provided by volunteers, and police protection is provided by the Town. The Town provides street lights and a central water system. Land use planning, zoning and subdivision regulations have been implemented in order to coordinate private development with desired growth patterns.

These desired development patterns are consistent with the standards of the North Carolina Coastal Area Management Act. All of the land within the Town is classified either as

transition or conservation. The conservation area includes eight acres of wetland, the estuarine waters of Trent River, the estuarine shoreline and the public trust areas of all navigable waters. It is the desire of town officials to protect each of the conservation areas from inconsistent development.

As a part of the 1985 update, data is presented which will assist in the analysis of the effect of a major hurricane on the Town of Trent Woods.

II. PRESENT CONDITIONS

POPULATION AND ECONOMY

In 1922 the New Bern Golf and Country Club was constructed approximately two miles west of New Bern on the banks of the beautiful Trent River. This facility provided the incentive for construction of a high quality residential area adjacent to the golf course. In the middle 1950's the area began to experience tremendous growth. As the area continued to grow, the people living within the area realized that at some point in time the Country Club area would be within the City of New Bern. Desiring to be responsible for their own governmental management, the people living within this area decided to incorporate. Thus the Town of Trent Woods was formed in 1959. Currently the town has 2,663 acres within its planning authority which includes the extraterritorial planning area.

The town's climate is warm in summer and generally mild in winter. The average annual temperature is 63 degrees. The average annual precipitation is 56 inches. The Trent River, the generally high elevation, and the good soils of the area are the town's primary natural resources. The river provides a tremendous recreational benefit. The high elevation prevents almost all areas of the town from flooding and the sandy soils provide excellent support for building foundations and road construction.

Almost all of the employed town residents work outside the planning area. Most have incomes much higher that the Craven County median. These people are employed in industry, government, finance and service within driving distance of the town. Employment within the town's planning area is available only at a few locations: Carolina Telephone, the New Bern Golf and Country Club, Matthews Boat and Cabinet Shop, Bangert Elementary School, three curb markets, and a night club. The employment provided by the above businesses do not have a major impact on the town's economy. Town officials are not encouraging employment generating activities. A history of the population growth in Trent Woods is illustrated by the following table.

Table 1

HISTORY OF TRENT WOODS POPULATION GROWTH

1960	1970	1980	1985
512	719	1177	*1600

Source: U. S. Census
* Estimated

The rate of population growth from 1960 to 1970 was 40 percent. From 1970 to 1980 the growth rate was 64 percent. The number of dwelling units in the planning area as of January 1985 was 1329. With the average number of persons per household at 2.72 persons, the estimated population of the town and its planning area is 3,615 persons.

Because of the small size of Trent Woods, population projections are not available from the N.C. Department of Administration. An analysis of the local building permit records for the years of 1974 thru 1984 indicate a decisive trend of continued growth.

Building permits have been issued within the town and its planning area since March 1974. Table 2 indicates the

number of permits issued. Lower interest rates account for the major increase in building permits in 1984. Table 2

TRENT WOODS BUILDING PERMITS ISSUED March 20, 1974 through December 30, 1984

Year	Units	Year	Units
1974	18	1980	19
1975	41	1981	41
1976	54	1982	22
1977	60	1983	55
1978	55	1984	179
1979	43	Total	597

Source: Building Permit Records

The residents of Trent Woods enjoy a high standard of living. As stated earlier, most employed residents work outside of Trent Woods. Table 3 shows the 1979 Trent Woods median income. That median income is more that twice that of both Craven County and the State of North Carolina.

Table 3
TRENT WOODS 1979 MEDIAN INCOME

	1979 Median Family Income	Percent Difference From State
Trent Woods	\$36,483	+110.0 Percent
Craven County	15,765	-9.3 Percent
State	17,376	

Source: U. S. Census, 1980

HOUSING

The quality of housing in Trent Woods is very high. For example, the average housing value was listed in the 1980 census as \$79,507. Many homes are valued above \$150,000. The average age of these homes is 15-20 years. Deteriorated

structures are non-existent. Table 4 is a good indicator of current housing conditions.

Table 4

TRENT WOODS HOUSING DATA

Number of Housing Units	444
Number of Occupied Units	443
Incomplete Plumbing	0
Owner Occupancy Rate	97.5%
Average Unit Size (Rooms)	6.9
Average Unit Value	\$78,507

Source: U. S. Census, 1980

EXISTING LAND USE

Within the town's planning area, there are 1,329 homes, one elementary school, a yacht club, a country club and golf course, three curb markets, a night club, a cabinet and boat shop, two mobile home parks, a fire station and the Town Hall. Matthews Boat and Cabinet Shop is located adjacent to a residential area and is the only industrial development within the town.

In past years the industry did not present any incompatibility problem. However, residential development has encroached to the southern boundary of the industrial property. There are no other incompatibility land use problems within the town.

Trent Woods has almost 1000 acres of undeveloped land within its planning area. Of this total, almost all is reserved for single-family residential. However, Fifty-four acres are reserved for multi-family and thirty-one acres are reserved for commercial. See Table 5.

Table 5

EXISTING LAND USE 1985

Land Use	Acres	Percent
Residential Commercial	1420 23	53.3 0.9
Institutional	74	2.8
Recreational	150	5.6
Industrial	6	0.2
Transportation, Communication &		
Utilities	4	0.2
Undeveloped	986	37.0
Total	2663	100.0

The land area which will experience change over the next five years is the undeveloped land. Growth in population is occurring. Over the past five years, slightly more than 100 acres have changed from undeveloped to residential use.

As discussed in the Conservation section of this plan, there are four areas of environmental concern: An eight acre wetlands tract, the estuarine areas of Trent River, the estuarine shoreline of Trent River, and the public trust areas of all navigable waters within the town. These areas will only be allowed to develop to the standards of the North Carolina Coastal Area Management Act. There are no other areas of environmental concern within the town or its planning area.

The town's present zoning is based on the purpose of providing low density high quality housing. The current zoning will allow the following use of undeveloped land. See Table 6.

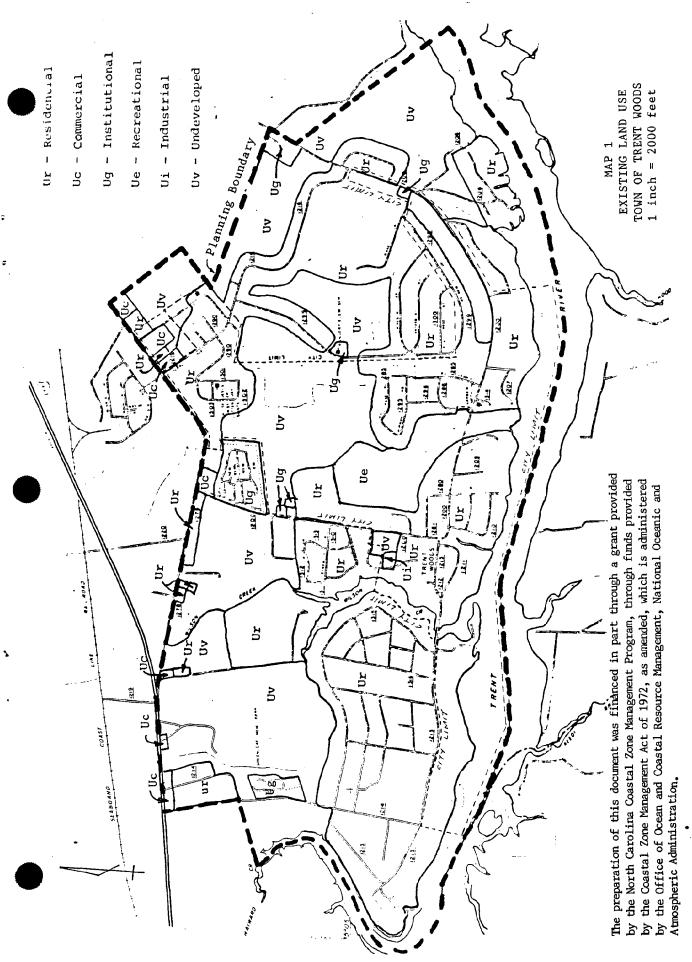
Table 6

UNDEVELOPED LAND 1985

Zoned	Acreage	
Residential Institutional Commercial Industrial	954 1 31 0	
Total	986	

Of the residential acreage, eight acres are wetlands and cannot be developed.

Based upon the rate of growth discussed in Section VI of this update, the undeveloped land will accommodate growth into the 21st. century.



III. CURRENT PLANS, POLICIES AND REGULATIONS

Trent Woods is a small, new town which does not plan to accommodate major growth. Future plans for development are to provide those basic services which will maintain the high quality of life that currently exist within Trent Woods.

TRANSPORTATION PLAN

The town does not have a Transportation Plan. However, it is included in the 1978 Transportation Plan for the City of New Bern. All streets in the town are adequate for current growth plans; consequently, the town plans not to increase the capacity of its street system.

COMMUNITY FACILITIES PLAN

The town's only community facilities are a water system and a street lighting system. The town is included in the New Bern EPA 201 Sewage Treatment Facility plan for future sewer service. Because of the current funding level of EPA, the near future implementation of that plan within Trent Woods is doubtful. There are no other community facilities plans for Trent Woods.

UTILITIES EXTENSION POLICY

Trent Woods has a public water system. It is the town's policy to extend those lines within its planning area upon request if financial participation is provided by those requesting service.

RECREATION AND OPEN SPACE

Current town policy is to consider public recreation as lands become available for that purpose. Currently, there is not any public recreation land in the town.

LAND USE PLANS

The town's Land Use Plan evolved from a land use policy. That policy is to encourage low density residential development, to discourage new mobile home parks, to encourage only neighborhood commercial uses and to encourage new industrial development outside of Trent Woods in other locations within Craven County.

The major land use issue for the town is to maintain the high quality of development. Past growth and economic trends for the town have been favorable. All development to date has been high quality, low density residential. Zoning regulations have been written in such a way as to insure that this trend will continue in the foreseeable future.

Adequate housing and other services are not issues within the town. Police protection and public water service are provided by the town, fire protection is provided by West of New Bern Volunteer Fire Department, garbage collection is provided by private contracts and sewer service is provided by individual septic tanks on large lots and in good soil. High quality residential living is the primary attraction for people desiring to live within the Trent Woods planning area.

Important natural and environmental resources within the town are good soils, high elevation, and Trent River recreation. Low density has been a major factor in the protection of these important resources. There are not any cultural and historic resources within the town or its planning area.

DEVELOPMENT OBJECTIVES, POLICIES AND STANDARDS

The alternatives for development of Trent Woods were presented to the citizens through a questionnaire in the development of the 1985 CAMA Land Use Plan update. Citizens were asked what they liked best about Trent Woods. The public was also asked what they liked least about Trent Woods. A key part of the questionnaire stated current development objectives. All of the twenty-six responses agreed with current development policy. In response to the questionnaire and other considerations, the town has reaffirmed the following development policy.

The Town of Trent Woods will continue to encourage low density residential development.

The Town of Trent Woods will continue to encourage only neighborhood commercial.

The Town of Trent Woods will continue to support industrial development within designated industrial areas of Craven County.

The Town of Trent Woods will continue to discourage expansion of existing mobile home parks.

The above policy is being implemented through its Zoning Ordinance and Subdivision Regulations.

ZONING ORDINANCE

The Town of Trent Woods adopted its Zoning Ordinance on January 4, 1973. The Zoning Ordinance divides the town into eight districts for regulating uses and one overlay district for protecting wetlands. The districts and the purpose of each are as follows:

Residential 20S (R-20S) - A single family residential district which allows single family dwellings.

Residential 20 (R-20) - A residential district which allows single family, two family and multifamily dwellings.

Residential 15S (R-15S) - A singly family residential district which allows single family dwellings.

Residential 15 (R-15) - A residential district allowing single family, two family and multifamily dwellings.

Mobile Home (MH) - A mobile home district which allows mobile homes.

Institutional (Inst) - A district which allows institutional uses such as offices and country clubs.

Industrial (Ind) - An industrial district having limited contact with the general public and which allows only light industrial uses, not emitting offensive noise, smoke, odors, or fumes.

Commercial (Com) - A commercial district which allows retail trade.

Wetlands (W) - An overlay district which may overlay any of the above district for the purpose of protecting wetlands as per the standards of the North Carolina Coastal Area Management Act.

Twenty thousand (20,000) square feet are required for each lot within the Residential 20S district. The net density, including streets, is 1.89 units per lot.

The Residential 20 district is designed to accommodate multifamily housing. The land area required within this district is as follows:

First dwelling unit 20,000 square feet Each additional unit 7,000 square feet

These land area requirements allow a net density of 6.04 units on a ten acre tract. With exception of the type of dwelling unit and density, all requirements of the Residential 20 district are identical to the 20S district.

The minimum lot area in the Residential 15S district is

15,000 square feet. The net density of the Residential 15S district, including streets, is 2.42 units per acre.

The Residential 15 district is designed to accommodate multifamily housing. The land area required within this district is as follows:

First dwelling unit 15,000 square feet Each additional unit 6,000 square feet

These land area requirements allow a net density of 7.11 units on a ten acre tract. With the exception of the type of dwelling unit and density, all requirements of the Residential 15 district are identical to the 155 district.

The Mobile Home district requires 5,000 square feet per lot and a minimum distance between between mobile homes of 20 feet.

Offices and the country club are the primary uses allowed in the Institutional district. It does not allow residential uses as are allowed in some other zoning ordinances.

The Industrial district allows only industrial uses and the Commercial district allows only commercial uses.

The ordinance is short, designed by the governing board specifically for the town. If a proposed used is not listed in the table of permitted uses, it is not allowed. If the proposed use is not listed in the table but is considered reasonable by the governing body, the town will consider an amendment to the table of permitted uses to allow the use.

No conflicts were found between this ordinance and and state enabling legislation.

SUBDIVISION REGULATIONS

The Subdivision Regulation, adopted on September 25, 1983 and written using enabling legislation as a direct reference, was also reviewed. The Subdivision Regulations have been amended to reference all new development to the North Carolina Coastal Area Management Act for consistence with designated Areas of Environmental Concern.

OTHER LOCAL REGULATIONS

The only other local regulations adopted by the town are the North Carolina State Building Code and nuisance regulations as allowed by state law. The town does not have a local flood ordinance, septic tank regulation, historic district regulation, dune protection ordinance, sedimentation code, or an environmental impact statement ordinance.

FEDERAL AND STATE REGULATIONS

The following is a list of federal and state agencies which have jurisdiction within the coastal area.

FEDERAL LICENSES AND PERMITS 1980

Agency

Licenses and Permits

Army Corps of Engineers -- Permits required under Section 9 and 10 of the Rivers and Harbors Act of 1899; permits to construct in navigable waters.

Permits required under Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972.

Permits required under Section 404 of the Federal Water Pollution Control Act of 1972; permits to undertake dredging and/or filling activities.

Coast Guard ------ Permits for bridges, causeways, pipelines over navigable waters required under the General Bridge Act of 1946 and the Rivers and Harbors Act of 1899. Deep water port permits.

Geological Survey ------ Permits required for off-shore Bureau of Land Management drilling.

Approvals of OCS pipeline corridor rights-of-way.

Commission

Nuclear Regulatory ----- Licenses for siting, construction and operation of nuclear power plants required under the Atomic Energy Act of 1954 and Title II of 1974.

Regulatory Commission

Federal Energy ----- Permits for construction, operation and maintenance of interstate pipelines facilities required under the Natural Gas Act of 1938.

> Permission required for abandonment of natural gas pipeline and associated facilities under the Natural Gas Act of 1938.

Licenses for non-federal hydroelectric projects and transmission lines under the Federal Power Act.

STATE LICENSES AND PERMITS 1980

Resources and Community Development - Division of Environmental Mangement

Department of Natural ---- Permits to discharge to surface water or operate wastewater treatment plants or oil discharge permits, NPDES Permits, (G.S. 143-215).

> Permits for septic tanks - The Division issues permits for septic tank systems of all sizes, providing the waste treatment facilities serve industrial process water flow or are community owned. The Attorney General has ruled that due to the language of the statute such systems owned by the State or

Federal government are under Health Department jurisdiction, while those owned by cities, counties and any other organization unit (such as a sanitary district and those system regulated by the N.C. Utilities Commission), are to be permitted by the Division of Environmental Management.

Permits for withdrawal of surface or ground waters in capacity use areas (G.S. 143-215.15).

Permits for air pollution abatement facilities and sources (G.S. 143-215.108).

Permits for construction of complex sources; e.g. parking lots, subdivision, stadiums, etc. (G.S. 143-215.109).

Permits for construction of a well over 100,000 gal/day (G.S. 87-88).

Resources and Community Development - Division of Coastal Management

Department of Natural ---- Permits to dredge and/or fill in esturaine waters, tidelands, etc. (G.S.113-229)

> Permits to undertake development in Areas of Environmental Concern (G.S. 113A-118). Note: Minor development permits are issued by local government.

Resources and Community Development - Division of Land Resources

Department of Natural ---- Permits to alter or construct a dam (G.S. 143-215.66).

Permits to mine (G.S. 74-51).

Permits to drill an exploratory oil or gas well (G.S. 113-381).

Permits to conduct geographical exploration (G.S. $1\overline{13}$ - $\overline{391}$).

Sedimentation erosion control plans for any land disturbing activities over one contiguous acre (G.S. 113A-54).

Department of Natural ---- Permits to construct an oil

Resources and Community Development - Secretary of NRCD

refinery.

istration

Department of Admin- ---- Easements to fill where lands are proposed to be raised above the normal high water mark of navigable waters (G.S. 146.6(c)).

Resources

Department of Human ----- Approval to operated a solid waste disposal site or facility (G.S. 130-166.16).

> Approval for construction of any public water supply facility that furnishes water to ten or more residences (G.S. 130-160.1)

The above list of federal licenses and state permits was provided by the North Carolina Department of Natural Resources and Community Development as a part of the 1980 update.

IV. PHYSICAL LIMITATIONS FOR DEVELOPMENT

FLOOD HAZARD AREAS

Trent Woods is located on the Trent River approximately two and one-half miles upstream from its intersection with the Neuse River. The town has approximately three miles of frontage along the Trent River. Tide records for the Trent River are not available and a Flood Plain Report has not been prepared for the town. The southern limit of the report by the U.S. Army Corps of Engineers for New Bern is within one mile of the town. Because of the proximity of the New Bern report, data presented in that report is thought generally applicable to Trent Woods as well.

Tide gauge records have been recorded in the Neuse River estuary at various times since 1895. Since October, 1956, the U.S.Geological Survey has maintained a recording tide gauge at New Bern. A review of those records indicates that tidal effects which occur in New Bern are due mainly to atmospheric pressure and winds. Stream flow or normal gravitational effects of the moon have little effect on the Trent River level at Trent Woods.

The greatest flood known to have occurred in the Trent Woods area during recent history occurred on September 19, 1955. Floodwaters from hurricane Ione rose to 10.6 feet above mean sea level. Accompanying this flood were winds up to 80 miles per hour and a rainfall of 20.04 inches in 24 hours. Another great flood struck the Trent Woods area in 1933. Local information indicates that the water accompanied by high winds and waves reached 7.7 feet above sea level.

Other large floods occurred in the Trent Woods area in September, 1960; August, 1955; October, 1954; and September, 1913. The August, 1955, flood was only two feet lower and one month earlier than the Ione flood.

The U.S. Army Corps of Engineers has prepared a study to determine the Intermediate Regional Flood for the New Bern area. This flood is known as the "100 year flood". An analysis by the Corps indicated that the Intermediate Regional Flood would be about 1.4 feet higher than the hurricane Ione flood tide of 1955.

Tide flood duration usually varies from about ten to twenty hours. Hurricane associated rainfall usually occurs within a period of twelve hours.

A flood barrier project was authorized by Congress in the Flood Control Act of 1965. The barrier has the potential of reducing the 100 year flood level from 12.0 to 5.8 feet. Because of the long time delay, it is unlikely that funds will ever be appropriated to construct the barrier on the Neuse River, approximately 18 miles below New Bern. See Chart 1 for the Peak Flood Elevations. See Table 7 for a complete list of recorded floods.

Man-made flood hazard areas do not exist within the Trent Woods planning area.

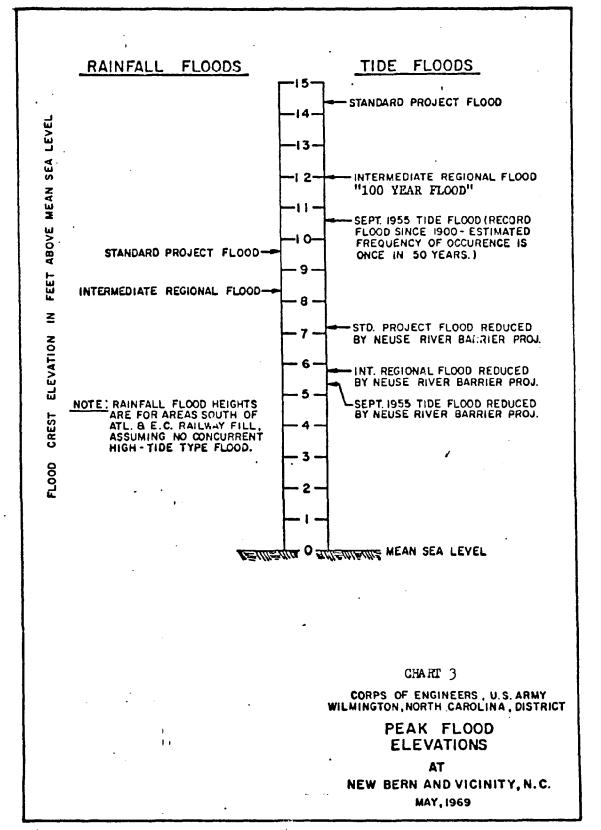


Table 7 Recorded Floods
New Bern Area

No.	Date of Flood	Neuse River Crest Elev. (feet)	Maximum 24-Hour Rainfall (inches)	Total Rainfall (inches)
1	Sept. 19, 1955; Ione	10.6	*	20.04
2	Aug. 12, 1955; Connie	8.6	8.62	12.98
3	Sept. 18, 1933	7.7	*	*
4	Sept. 3, 1913	7.7	*	*
5	Aug. 17, 1955; Diane	7.4	4.44	6.82
6	Sept. 12, 1950; Donna	6.4	4.23	4.51
7	Oct. 15, 1954; Hazel	6.2	1.76	1.92

* No record

Source: U. S. Army Corps of Engineers

Less than five percent of the town and its planning area is lower than 20 feet above mean sea level. Consequently, the town would experience only minor flooding in the event of a 100 year flood.

SOILS

Most of Trent Woods has excellent soils for development. Sixty-two percent of the town's soils are sandy; thus, septic tanks on large lots work well in these soils. Within the Lakeland Sand, however, there is a possible hazard of horizontal water movement from drain fields to private water supplies. This is one of the reasons that the town constructed a public water system. While the hazard of contamination of drinking water no longer exists, the town still maintain low density. Low density and good soils are keys to adequate treatment of wastewater using septic tanks. See Table 8 for a distribution of soils within the town's planning area.

Table 8 Soil Distribution
Trent Woods Planning Area

Soil Number	Soil Name	Acres	Percent of Town	Development Suitability
371 78 365 352 37 410 544 35 Subtotal	Kenansville Lakeland Norfolk Kalmia Conetoe Goldsboro Altavista State	1,405 326 48 44 33 18 17 13 1,904	52.8 12.3 1.9 1.8 1.2 0.6 0.6 0.4 71.6	Good Good Good Good Good Good Good Good
460 Subtotal	Pactolus	43 43	1.6 1.6	Fair Fair
870 BJ 402 417 582 830 891 893 836 Subtotal	Torhunta Johnston Johns Lynchburg Leon Rains Murville Caperss Pantego	295 210 72 35 30 20 19 9 6 716	11.1 8.6 2.7 1.3 1.1 0.7 0.7 0.3 0.3 26.8	Poor Poor Poor Poor Poor Poor Poor Poor
Total		2,663	100.0	

WATER SUPPLY AREAS

The Town of Trent Woods has a public water system connected to the City of New Bern system. The water supply is the Tuscolossa aquifer via deep wells located 18 miles west of Trent Woods. Not all of the planning area is served by this system. Those homes not served receive their water from private individual shallow wells.

STEEP SLOPES

There are no slopes greater than 12% within the Town of Trent Woods.

AREAS OF ENVIRONMENTAL CONCERN

A key element within the Coastal Area Management Act is the identification of fragile areas and designation of these areas as Areas of Environmental Concern (AEC). Of the AEC areas identified in the Coastal Resources regulations, Trent Woods has only Coastal Wetlands, Estuarine Waters, Estuarine Shorelines and Public Trust Areas. The Public Trust Areas overlay the Estuarine Waters and include all navigable waters within the town's planning area. None of the following AEC areas are within the town's planning area: Ocean Hazard Categories, Public Water Supply Categories, Fragile Coastal Natural Categories, and Cultural Resources Categories.

Coastal Wetlands Areas of Environmental Concern - The town has approximately eight acres of Coastal Wetlands.

These high tidal marshlands are adjacent to the Trent River.

Marsh grasses within the area include salt marsh Cordgrass

(Spartina alterniflora) and Black Needlerush (Juncus roemerianus). This marshland type contributes to the detritus supply necessary to the highly productive estuarine system essential to North Carolina's economically valuable commercial and sports fisheries, and also stabilizes the shoreline against erosion.

The higher marshes offer quality wildlife and waterfowl habitat depending on the biological and physical conditions of the marsh. The vegetative diversity in the higher marshes usually supports a greater diversity of wildlife types than the limited habitat of the lower tidal

marsh. This marshland type also serves as an important deterrent to shoreline erosion, especially in those marshes containing heavily rooted species. The dense system of rhizomes and roots of <u>Juncus roemerianum</u> is highly resistant to erosion. In addition, the higher marshes are effective sediment traps.

Appropriate land uses within these areas include utility easements, fishing piers, docks and similar uses not involving excavation or fill.

Estuarine Waters Area of Environmental Concern - The Estuarine Waters include all waters from the mouth of Wilson Creek downstream to and including the areas of the Atlantic Ocean under the jurisdiction of the State of North Carolina. Estuaries are among the most productive natural environments of North Carolina. They not only support valuable commercial and sports fisheries, but are also utilized for commercial navigation, recreation, and aesthetic purposes. dependent upon estuaries, such as menhaden, shrimp, flounder, oysters and crabs; make up over 90 percent of the total value of North Carolina's commercial catch. These species must spend all or some part of their life cycle in the estuary. The high level of commercial and sports fisheries and the aesthetic appeal of coastal North Carolina is dependent upon the protection and sustained quality of our estuarine areas. Appropriate uses within this area are those that preserve the estuarine waters in order to safeguard and perpetuate their biological, economic and aesthetic values.

Highest priority will be allocated to the conservation of estuarine waters. The development of navigational channels, the use of bulkheads to prevent erosion, and the building of piers where no other feasible alternative exists are examples of uses appropriate within estuarine waters, provided that such uses will not be detrimental to the biological and physical estuarine functions and public trust rights. Projects which would directly or indirectly block or impair existing navigational channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters are generally considered incompatible with the management of estuarine waters.

Estuarine Shorelines Area of Environmental Concern - Estuarine Shorelines are those non-ocean shorelines which are especially vulnerable to erosion, flooding, or other adverse effects of wind and water and are intimately connected to the estuary. This area extends on shore for a distance of 75 feet from mean high water level or normal water level along the estuarine waters of Trent River. Development within estuarine shorelines influences the quality of estuarine life and is subject to the damaging processes of shore front erosion and flooding.

Public Trust Waters Area of Environmental Concern - All waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state

jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high water mark; all navigable natural bodies of water and lands thereunder to the mean high water mark or ordinary high water mark, except privately owned lakes to which the public has no right of access; all waters in artificially created bodies of water in which exist significant public fishing resources or other public resources, which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; all artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication or any other means. Included in Public Trust Waters are areas such as waterways and lands under or flowed by tidal waters or navigable waters, to which the public may have rights of access or public trust rights and areas which the State of North Carolina may be authorized to preserve, conserve, or protect under Article XIV, Section 5, of the North Carolina Constitution. Within the Town of Trent Woods and its planning area, these areas are all navigable waters of Trent River and its tributaries.

There are no other Areas of Environmental Concern within the town or its planning area.

AREAS WITH RESOURCE POTENTIAL

With the exception of a small acreage of productive agricultural land, which is classified as undeveloped residential within the town's zoning ordinance, there are not

any areas within the town's planning area which have resource potential as defined by the Coastal Resources Commission planning guidelines.

MAN-MADE HAZARDS

There are no man-made hazards to development within the town or its planning area. Cherry Point Marine Air Base is located twenty miles east of Trent Woods. Very few military aircraft fly over the Town of Trent Woods.

V. CAPACITY OF COMMUNITY FACILITIES

CAPACITY OF COMMUNITY FACILITIES

Water System

Based on information from the City of New Bern, New Bern has a reserve capacity for approximately 10,000 additional people. Over the next fifteen years, to the year 2000, the estimated growth within the Trent Woods planning area is expected to be approximately 2,400 people. (See Table 9 on page 47).

Water is purchased by Trent Woods for resale to its customers. The Town of Trent Woods provides water throughout the town and at some locations within its planning area. Based upon the reserve capacity of the City of New Bern, there is sufficient water supply for full development of the Town of Trent Woods. Political negotiations early in the 21st. century between Trent Woods and New Bern will determine the future availability of reserve capacity to support growth in Trent Woods.

Sewage System

An Environmental Protection Agency (EPA) 201 Sewage
Treatment Plan has been prepared for the New Bern area. The
alternatives for service of this area are as follows:

- Expansion of the New Bern Sewage Treatment Plant to serve adjacent areas. Cost = \$20,320,000+. Trent Woods local cost \$1,000,000+.
- 2. Construction of a new plant in Bridgeton, Trent Woods and James City. Cost = \$20,230,000+. Trent Woods local cost \$1,000,000+.
- 3. Expansion of New Bern Plant to serve Trent Woods and
 James City. New plant in Bridgeton cost =
 \$20,300,000+. Trent Woods local cost = \$1,000,000+.

- 4. Expansion of the New Bern Plant to serve Trent Woods and Bridgeton. New plant in James City. Cost = \$20,210,000+. Trent Woods local cost = \$1,000,000+.
- 5. Expansion of New Bern Plant to serve Bridgeton. New plant to serve Trent Woods and James City. Cost = \$20,300,000+. Trent Woods local cost = \$1,000,000+.
- 6. Identical to alternative 5, except that new plant to serve Trent Woods and James City be located in James City. Cost = \$20,350,000+. Trent Woods local cost = \$1,000,000+
- 7. Construction of a new plant in Bridgeton and Trent Woods-James City. Cost= \$20,400,000+. Trent Woods local cost = \$1,000,000+
- 8. Expansion of New Bern Plant to serve Trent Woods. New plant to be constructed in Bridgeton and James City. Cost = \$20,180,000+. Trent Woods local cost = \$1,000,000+.

All of the above values are in 1975 dollars. The town prefers alternative 8.

There is considerable interest by the residents and town officials to construct a sewage system. Neither a detailed feasibility study for a sewer system has not been prepared nor the actual cost of a sewer system has not been determined. A future bond referendum may be necessary held for the construction of a system. Package sewer treatment plants is also an option for treatment of sewage in Trent Woods. The town will allow such plants if approved by the appropriate state agency.

There is some difference in the population estimates and projection as shown in the Land Use Plan and the EPA 201

Sewage Treatment Plan. The 1985 population for Trent Woods is considerably less than the 4,140 persons listed in the 201 plan. The estimates and projection shown in the 201 plan

include other areas outside of the Town of Trent Woods planning jurisdiction.

The Town of Trent Woods has four Areas of Environmental Concern: an eight (8) acre wetland area, estuarine waters of Trent River, estuarine shorelines along Trent River, and public trust areas. Should installation of the 201 project ever occur, these areas will be protected from any damage during the construction period and thereafter.

Roads

All streets within the town are designated as local except for Chelsea Drive, Country Club Road and Highland Avenue. Those streets are designated as thoroughfares in the City of New Bern Thoroughfare Plan. Projected traffic in 1995 for Chelsea Drive, Country Club Road and Highland Avenue is 5300, 2700 and 1100 vehicles per day (VPD), respectively. According to the Thoroughfare Plan, these existing streets are currently constructed to accommodate 8200 VPD. Existing traffic for Chelsea Drive is 2900 VPD or 35% of existing capacity, Country Club Road is 1900 VPD or 23% of existing capacity, and Highland Avenue is 2700 VPD or 33% of existing capacity.

VI. ESTIMATED DEMAND

POPULATION

The following population projection is based the growth trends as listed in the town's building permit files.

Chart 2

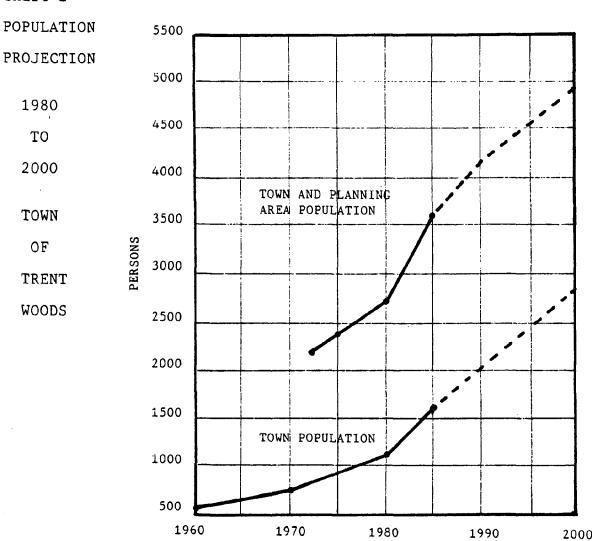


Table 9 FUT

FUTURE POPULATION

POPULATION	PROJECTION	DESIRED FUTURE	E POPULATION
1975 1980 1985 1990 2000	2,394 3,051 3,614 4,224 4,834	1980 3 1985 3 1990 4	2,394 3,051 3,614 4,224 4,834

Source: Estimate based on building permits

The 1995 population projection is approximately the same as the citizens of the town indicated that they believed was a reasonable population for the town planning area.

Because Trent Woods is a residential area of permanent residents, there is not a seasonal population fluctuation. The population and economic growth trends of Trent Woods indicate an even steady growth.

FUTURE LAND NEEDS

Trent Woods has long considered its purpose to provide high quality housing. The demand has been and will continue to be housing. Because of the close proximity to New Bern, less than one mile, goods and services are not provided in Trent Woods. Thirty-one acres of undeveloped land has been zoned for commercial use and will be developed at a later date. The town's only industry is a family business which employs only five people.

Table 10

LAND USE NEEDS
TRENT WOODS PLANNING AREA
1985 - 2000

Year	Residential Acreage
	9
1985	1420
1990	1520
2000	1620

Commercial acreage needs are so small, it is not listed in the above table.

COMMUNITY FACILITY DEMAND

Density allowed by the Zoning Ordinance is extremely low. The R-20S zoning district, of which over 70% of the

town is zoned, only allows 1.89 dwelling units per acre. In areas where public water is provided, the zoning district is R-15S which only allows 2.42 dwelling units per acre. One small area of less than 10 acres is zoned R-20 which allows multi-family at a density of less than 7 dwelling units per acre. Because of these low densities, the need for community facilities is not great.

Water System

As stated earlier in this plan, the Town purchases water from the City of New Bern. Present consumption is 98,000 GPD. By the year 2000, the consumption is expected to increase to 348,000 GPD (assuming full connection of the town and its planning area). Based upon data from the City of New Bern, the town's water supplier, the existing City of New Bern system has sufficient reserve capacity to support future water needs thru the year 2000.

Sewage System

Low density and good soil allow for efficient septic tank operation in most areas of the town. Town officials became interested in public sewer service through discussions with the engineers in preparation of the EPA 201 plan. Within the public participation plan, a great deal of comment evolved concerning the desire to have a sewer system. Based on information from the county health officer, there has been no evidence of pollution of the estuarine waters either within the town or its planning area. With all of the water-front property currently developed and future development at

such a low density, it is unlikely that full development will require the installation of a public sewer system. The future of a public sewer system rests with the uncertain fate of the New Bern Regional EPA 201 Sewer Treatment Plan.

Package Treatment plants offer a potential source of sewage treatment. The town will allow package treatment plants within the town if approved by the appropriate federal, state and county agencies.

Park Land and River Access

Development over the next ten years will impact on facilities such as park land and river access. While the growth expected will not require the installation of a public park, consideration is being given to the concept while vacant land still exists. Three large public accesses exist adjacent to Trent Woods. The closest public access is within one mile of the town and the farthest is approximately three miles from the town. These accesses are considered adequate for the town's river recreational needs.

VII. POLICY STATEMENTS

RESOURCE PROTECTION

Within the Town of Trent Woods and its planning areas, Areas of Environmental Concern exist. These are Coastal Wetlands, Estuarine Waters, Estuarine Shoreline and Public Trust Areas. There are no other Areas of Environmental Concern areas within the town or its planning area as currently defined by the Coastal Resources Commission.

The Coastal Wetlands is discussed in detail within the Physical Limitation section of this report. Because of the fact that the wetlands area is small, only approximately eight acres, only limited use of this area should occur. addition to the eight acres, there may be other small wetland areas at other locations along Trent River and its tributaries. The town believes limited use such as piers and boat docks would be reasonable but not commercial marinas. While there is some biological benefit to Trent River due to the existence of the eight acre marsh area, no commercial fishing and only limited sports fishing occurs within the town along Trent River. While this small area has little impact, the cumulative effect of many marsh grass areas have significant impact on marine life within the Pamlico Sound. Town officials have zoned the area as wetlands and will protect it under the Zoning Ordinance. Town officials also believe the State of North Carolina has a responsibility to protect the area as well.

The Estuarine Waters are also discussed in detail within the Fragile Areas section of this report. The waters are

extremely important to the Town of Trent Woods. recreation and scenic value is the primary reason the golf club located on the Trent in 1922. Since that time, the estuarine waters have been used by the residents of the town for recreation purposes. The waters of the Trent River provide excellent boating and bathing activities. development along the banks of these waters has been for boat houses and docks. Boat storage is the only commercial activity on the Trent River within Trent Woods. believes that the only appropriate uses of estuarine waters within the town and its planning area are piers, boat docks, and boat storage for the purpose of providing access to the estuarine waters. The town receives tremendous benefits from these waters and is very much interested in these waters being protected, not only for the recreational and scenic value but also for the value that these waters provide our commercial and sports fishing. Town, state, and federal protection is needed. The town protects the river through zoning, the state protects the water quality and the federal government keeps the channel marked and navigable.

The Estuarine Shorelines are discussed in detail within the Physical Limitation section of the report. The prime use of this area by the citizens of Trent Woods is for recreation. The town supports the protection of this area for the benefit of the citizens of Trent Woods. However, this use must be balanced with the need to protect the estuarine shoreline for environmental purposes. Consistent

with this need, appropriate uses within this area are those uses which substantially preserve natural barriers to erosion.

The only other Area of Environmental Concern within the town is the Public Trust Waters. These waters are defined as all navigable waters within the town and its planning area. The Public Trust Waters are discussed in detail within the Fragile Areas section of this plan. Reasonable land uses are identical to those consistent with the intent of the Estuarine Waters and are important to the town for the same reasons. Town, state, and federal protection are necessary for the protection of these areas.

The town's policy is to not allow the development of Areas of Environmental Concern except as allowed by CAMA. Implementation is accomplished through state regulations and the town's zoning and subdivision ordinances.

Soils are another constraint to development. While 71% of the town has soils that are suitable for development, the town's policy is to discourage development in areas where soil conditions are not suitable for the installation of septic tanks. An alternate considered policy was to allow such development, but was dismissed as inappropriate.

Implementation is accomplished through the authority of the Craven County Department of Environmental Services. Soils which cannot support development are checked by the county sanitarian. Septic tanks are not allowed in soils which will not allow proper septic tank installation.

Very little land area within the town is subject to flooding. The 100 year flood elevation is 12 feet above mean sea level and over 98% of the homes are above this elevation. Flooding within the town was not extensive during the major hurricanes of the 1950's.

There are no specific local resource development issues other than AEC's within the town. The town does not have fresh water swamps or marshes, maritime forests, cultural and historic resources or man-made hazards.

RESOURCE PRODUCTION AND MANAGEMENT

Resource production and management within the Town of Trent Woods is limited to recreation resources of Trent River. The importance of Trent River has been discussed within the AEC section. The town's policy is to protect from incompatible development this recreational resource for both water sports and recreational fishing. This policy is implemented by CAMA and the Zoning Ordinance. Within the town there are no significant productive agricultural lands, commercial forests, existing and potential mineral production areas, or commercial fishing areas.

Storm water runoff does not degrade water quality within Trent Woods. Because of the low density and high sand content of the soils within Trent Woods, storm water runoff associated with continued growth is not expected to degrade water quality in the future.

ECONOMIC AND COMMUNITY DEVELOPMENT

The Town of Trent Woods supports the industrial

development program of Craven County. This program has not designated any future industrial sites within Trent Woods or its extraterritorial planning areas. The town's purpose for being is to provide areas for high quality residential development. Major industrial development within the town and its planning area is regarded as inappropriate by the Town Board of Commissioners. The one industrial area designated in the town's Zoning Ordinance is a small family business which began in the 1930's. The town did not desire to consider alternatives to this policy. This policy is implemented through the Zoning Ordinance.

The Town Board's policy is to provide services for residential, institutional, and neighborhood business. Two alternatives to this policy are (1) not to provide any service or (2) to provide limited services to developing areas. Because of the sandy soil conditions and in future decades the possibles contamination of wells from septic tanks, the first of these alternatives was rejected. In order to implement this policy, a water system was constructed in 1980. The town is also interested in constructing a sewer system. In considering financing sources, the Town Board has concluded that a sewer system can only be installed as a part of the implementation of the New Bern Regional EPA 201 Plan. Financing for the 201 plan does not appear likely in the near future.

Package Treatment plants offer a potential source of sewage treatment. The town will allow package treatment

plants within the town if approved by the appropriate federal, state and county agencies.

Policy for future development is to continue to encourage low density residential development, neighborhood commercial near the fire station, industrial development in other areas of Craven County and to discourage expansion of existing mobile home parks. Because of major interest expressed by the citizens in the questionnaire that this policy should continue, the Board decided not to consider any alternatives to this existing policy. This policy is implemented by the Zoning Ordinance.

Redevelopment of existing areas is not an issue within Trent Woods. Development of the area began in 1922 and there are not any deteriorated areas within the town.

Redevelopment of existing areas may be an issue if storm damage should cause major destruction. Should this occur, the town will allow redevelopment and/or reconstruction on existing recorded lots.

Because of the "smallness" of the Town of Trent Woods, there has been only limited involvement with state and federal programs. With the exception of LEAA, FmHA, EPA and CAMA, the town has not participated in any state or federal programs.

Since the town's existence, the U.S. Coast Guard has maintained channel markers in Trent River. Erosion is not occurring. Therefore, the location of the channel has not changed. Neither beaches nor beach maintenance exist within

the town.

As stated previously, the Town of Trent Woods does not desire to have major industrial development within its planning jurisdiction. An energy facility is therefore deemed inappropriate. This policy will be implemented through the Zoning Ordinance.

The current Zoning Ordinance does not currently allow additional commercial marinas. Any request which might be received for a commercial marina will be reviewed as a part of the standard rezoning process. All homes within the town must be constructed to the North Carolina State Building Code. Floating homes are not allowed under this code and are therefore deemed to be not allowed in the jurisdiction of the Town of Trent Woods.

Waterfront access is important to the town. Currently there exist three large public boating access areas near the town and many private boating accesses. The Town Board has determined that the existing boating access facilities on Trent River are adequate for the town's needs. It is the town's policy to review on a case by case basis any areas which may be offered to the town for waterfront access.

HAZARD MITIGATION POLICY

Trent Woods is located thirty miles inland from the Atlantic Ocean. Because of the distance from the ocean and the narrowness of the river at Trent Woods, only 1/4 of a mile, wave action and erosion is not a problem. High winds and flooding are the two problems Trent Woods should expect

to be associated with hurricanes.

The North Carolina Building Code requires that buildings be designed to withstand wind velocities of 100 miles per hour. While winds of this speed have not been experienced since the 1950's, during that time winds of those velocities were common. Between September of 1954 and October of 1955 Trent Woods experienced three hurricanes with wind velocities at or near 100 miles per hour.

Flood levels during these hurricanes were also a problem. On September 19, 1955, Hurricane Ione created the highest flood on record. Trent River crested at 10.6 feet above sea level. The U.S. Army Corps of Engineers has determined that the 100 year flood level for Trent Woods is 12 feet above sea level.

All of the town is effected by high winds. A portion of the town is effected by flooding. The map on page 65 shows the areas of the town subject to damage by hurricanes.

Within Trent Woods' planning area there are 1326 homes and 14 commercial structures. The 1980 census lists the average value for each home at \$79,507. The average estimated value for commercial structures is \$150,000. Based on this data, Table 11 list the estimated value of property within the town's planning area.

Table 11
Estimated Property Value
Trent Woods Planning Area

Type	Average Value	Number Units	Total Value
Residential Units Commercial Bldgs Government Bldgs	\$79,507 \$150,000 90,000	1329 14 2	\$105,664,803 2,100,000 180,000
Total		1345	\$107,944,803

All structures within the town's planning area have been constructed to the standards of the North Carolina State

Building Code. During the hurricanes of the 1950's, there was little structural damage. However, there was major damage to roofs, porches, windows, siding and accessory buildings. Assuming a wind damage of 10% of the total property value, the total estimated wind damage value would be almost 11 million dollars for the town's planning area.

While rainfall is heavy during hurricanes, rising water caused by wind tides in the Trent River presents the only flooding threat to the town. Due to the relative high elevation of the town, Trent Shores and Wilson Point are the only areas within the town's planning area effected by flooding.

All of the land use in these area are single family residential. The value of these thirty-two residential structures is shown in Table 12.

Table 12

Property Values

Located on Lots below 100-Year Flood Level
Trent Woods Planning Area January, 1985

Trent Shores Subdivision

Tax Number	Improvements	Total Value
8/46/10 8/46/15 8/46/16 8/46/17 8/46/18 8/46/22 8/46/25 8/46/26 8/46/28 8/46/31 8/46/32 8/46/44 8/47/1 8/47/1 8/47/1 8/47/1 8/47/19 8/47/19 8/47/19 8/47/19	\$ 61,760 58,840 50,900 67,550 54,700 43,360 53,560 26,370 33,260 62,910 48,440 60,770 35,000 35,000 35,090 81,210 45,500 47,900 63,880 46,050 45,730 55,500 53,270	\$ 70,506 64,900 58,180 74,150 59,450 54,240 69,380 34,600 41,170 82,600 80,730 68,830 65,243 65,923 101,610 96,050 81,454 94,260 78,138 96,646 66,820 77,756
Trent Shores Subtotal	\$1,131,550	\$1,582,636

Wilson Point Subdivision

Tax Number	Improvements	Total Value
8/53/6 8/53/7 8/53/8 8/53/9 8/53/10A 8/53/12 8/53/13 8/53/34 8/53/36 8/53/39	\$ 44,510 55,140 78,040 94,800 29,670 39,330 29,860 85,620 47,750 38,980	\$ 112,190 93,490 126,300 132,620 79,100 66,860 56,982 109,020 59,850 63,580
Wilson Point Subtotal	\$ 543,700	\$ 899,992
Total	\$1,675,250	\$2,482,628

The above values are based on the Craven County tax value as of January, 1985. These values will increase as a result of the county reevaluation, currently underway.

The total improvement tax value for the Trent Shores and Wilson Point Subdivisions is \$1,675,250. Assuming an average flood damage of 30% of the improvement tax value for a 100 year flood, the flood damage could be as high as 1/2 million dollars. There are additional recorded lots within the areas subject to flooding by a 100 year storm. It is the town's policy to issue permits for construction, if requested, on these recorded lots.

Mitigation needs for Trent Woods are for wind and flood damage. The town will continue to require that structures be built to the 100 mile per hour wind velocity standards listed in section 1205, Volume I of the North Carolina State Building Code. Modular and mobile homes should continue to be anchored according to the hurricane zone standards listed in Appendix A, State of North Carolina Regulations for Mobile Homes and Modular Homes.

EVACUATION PLAN

Both Trent Woods and Craven County have adopted the Disaster Plan prepared by the Craven County Office of Emergency Services. In the event that evacuation is determined to be necessary, it will be implemented by that Office with the assistance of the Trent Woods Police Department. The Craven County evacuation plan has been evaluated by the town and found to be appropriate. The time

required for evacuation from the areas of the town subject to flooding does not exceed the standard warning time provided by the National Weather Service.

POST-DISASTER RECONSTRUCTION PLAN

Immediate clean-up is the most pressing need after a hurricane. The town's responsibility deals with health, safety and public welfare. As a part of the immediate clean-up activity, any materials causing a hazard to the citizens will be removed. The town will also check its water system for contamination. If any contamination is found, the town will take immediate steps to prevent the contamination from adversely affecting its citizens and correct the problem.

The town also has responsibility for clean-up of its streets. This activity will be performed by either the hiring of temporary employees or contracting with local persons that have the capacity to accomplish this task.

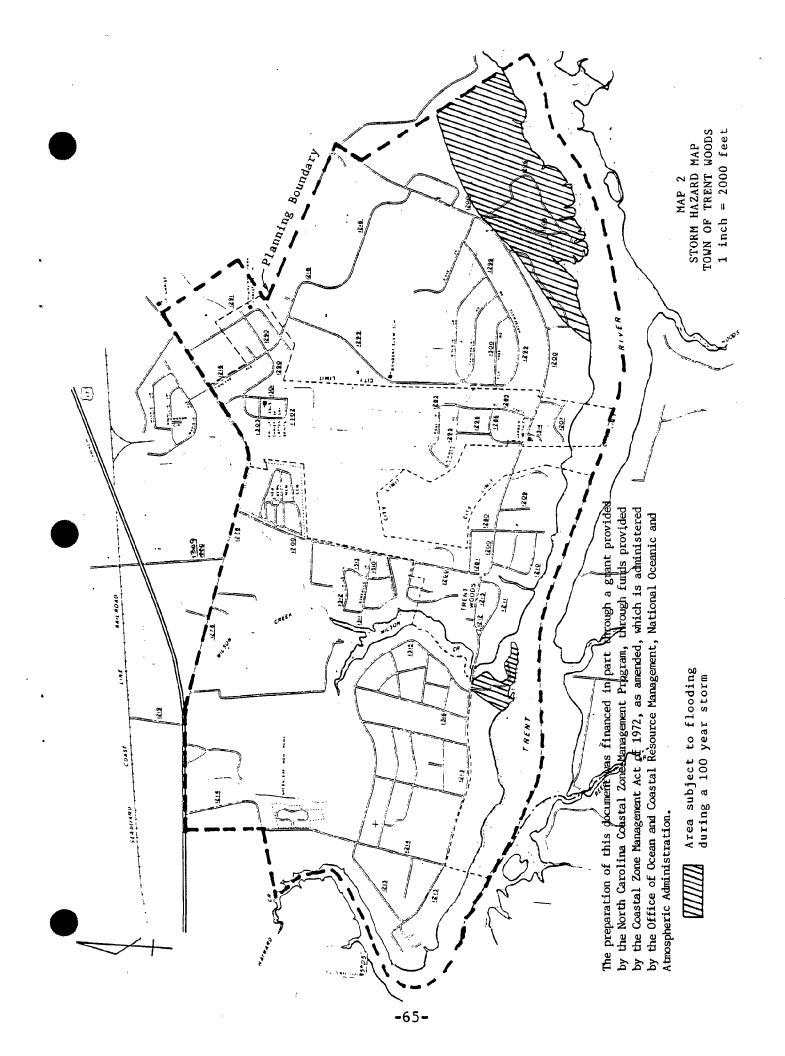
Restoring electrical service will be necessary.

Carolina Power and Light and the City of New Bern has responsibility for this service.

Reconstruction over a longer period will be a major problem for those persons sustaining major property damage. Because of the small size of the town, the Town Board of Commissioners will serve as the Recovery Task Force. The Town Board will oversee the repair of the town's streets and any other public facility sustaining damage. It is the town's policy to repair these public facilities as quickly as possible.

It is also the town's policy not to implement a temporary moratoria. This policy will allow all private property to repaired or rebuilt as quickly as possible. Building permits will be issued as requested by the town's citizens. Development standards for repairs and/or reconstruction are the Zoning Ordinance and the North Carolina State Building Code.

There are no public facilities other than streets and water lines within the areas subject to flooding. Therefore, the town does not plan to relocate any public facilities.



VIII. LAND CLASSIFICATION

LAND CLASSIFICATION

The Land Use Plan is made up of several important elements: (1) the development policy of the Town of Trent Woods, (2) the planning guidelines of the Coastal Resources Commission, and (3) spatial distribution of various existing land uses of the town.

The state's Land Use Planning Guidelines for Coastal
North Carolina requires that lands within the jurisdiction of
a local government be classified as Developed, Transition,
Community, Rural and Conservation. Within the town, there
are two classes: Conservation and Transition. The planning
guidelines state that:

"Conservation:

Purpose. The purpose of the conservation class is to provide for the effective long-term management and protection of significant, limited or irreplaceable areas. Management is needed due to the natural, cultural, recreational, scenic or natural productive values of both local and more than local concern.

Description and Characteristics. Areas meeting the intent of this classification include: AEC's, including but not limited to public trust waters, estuarine waters, coastal wetlands etc. as identified in 15 NCAC 7H; other similar lands, environmentally significant because of their natural role in the integrity of the coastal region and including but not limited to bottom land hardwoods, pocosins, swamp forests, areas that have a high probability of providing wildlife habitat, forest lands that are essentially undeveloped and lands which otherwise contain significant productive, natural, scenic, sultural or recreation resources."

Within the Town of Trent Woods, the conservation areas are the eight acre wetlands area south of Trent Shores Drive, the estuarine waters of Trent River, the esturine shoreline, and the public trust areas of all navigable waters.

Concerning the Transition classification, the planning

guidelines state that:

"Transition:

Purpose. The purpose of the transition class is to provide for future intense urban development on lands that are suitable and that will be provided with the necessary urban services to support intense urban development.

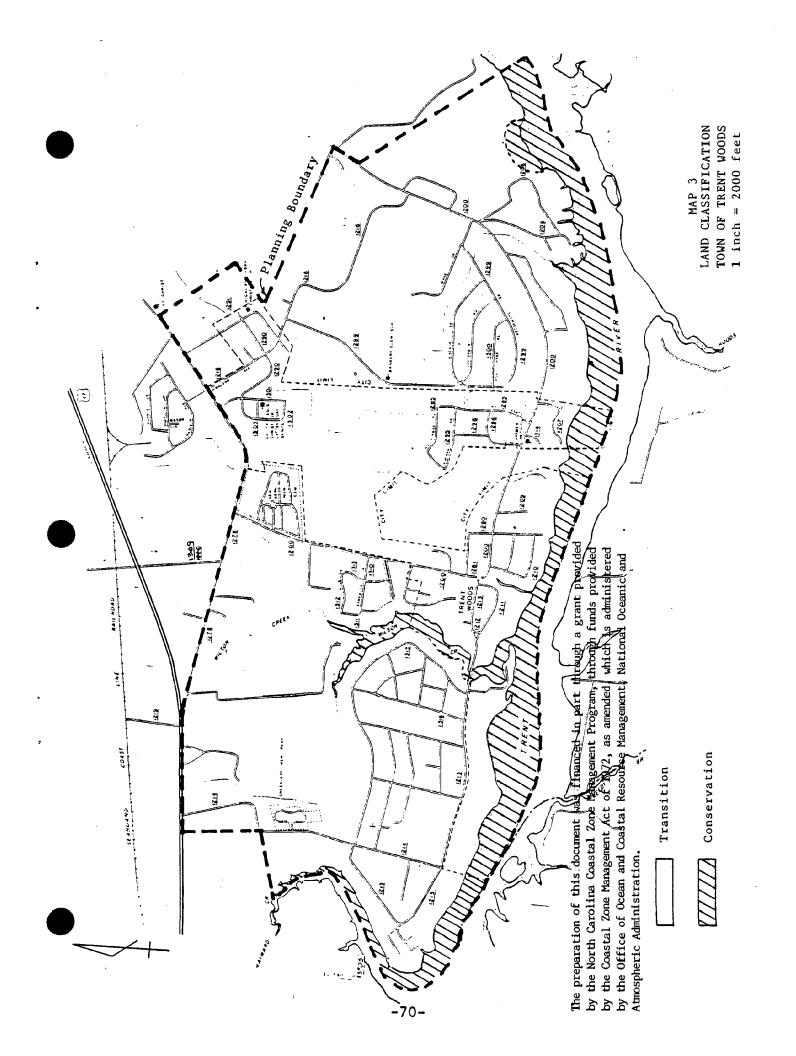
Description and characteristics. Areas meeting the intent of the transition classification are presently being developed for urban purposes or will be developed in the next five to ten years to accommodate anticipated population and urban growth. These areas are in, or will be in a "transition" state of development going from lower intensity uses to higher intensity uses and as such will eventually require urban services.

Areas classified transition will provide lands for intensive urban growth when lands in the developed class are not available. Transition lands must be able to support urban development by being generally free of physical limitations and be served or readily served by urban services. Urban development includes mixed land uses such as residential, commercial, institutional, industrial and other uses at or approaching high to moderate densities. Urban services include water, sewer, streets and roads, police and fire protection that will be made available at the time development occurs or soon thereafter. Permanent population density in this class will be approaching 2,000 persons per square mile and the seasonal population may swell significantly.

In choosing land for the transition class, such land should not include: Areas with severe physical limitations which would make the provision of urban services difficult or impossible, lands which meet the definition of conservation, lands of special value (unless no other alternative exists) such as productive and unique agricultural lands, forest lands, potentially valuable mineral deposits, water supply watersheds, scenic and tourist resources including archaeological sites, habitat for important wildlife species, areas subject to frequent flooding, areas important for environmental or scientific values, lands where urban development might destroy or damage natural systems or processes of more than local concern, or lands where intense development might result in undue risk to life and property from natural or existing manmade hazards."

Within the Trent Woods planning area, there are approximately 3,600 persons living on 1,420 acres of

developed residential land. the average density of the area is 2.54 persons per acre, or 1,625 persons per square mile. All of Trent Woods and its planning area is of an urban character. Water service was installed in 1980. Sewer service is expected to follow. For these reasons, Trent Woods, including its planning area, is classified as transition.



IX. INTERGOVERNMENTAL COORDINATION AND IMPLEMENTATION

INTERGOVERNMENTAL COORDINATION AND IMPLEMENTATION

Craven County, New Bern and Trent Woods are the three local units of government which are involved in the development of Trent Woods and the implementation of this plan.

Craven County provides assistance with the development of an evacuation plan under the Office of Emergency Services, building inspection through the Craven County Building Inspection office, and septic tank review and approval through the Craven County Health Department.

New Bern provides assistance with the development of Trent Woods by providing water for the town's water system. Water is purchased by Trent Woods from New Bern and resold to its citizens. New Bern is also cooperating with Trent Woods in the improvement of Trent Road. This road was substandard in width and in very poor condition. Being the dividing line between the City of New Bern and the Town of Trent Woods, both New Bern and Trent Woods are participating in Trent Road's widening and resurfacing.

X. TRENT WOODS, NEW BERN AND CRAVEN COUNTY
PLAN RELATIONSHIPS

TRENT WOODS, NEW BERN AND CRAVEN COUNTY PLAN RELATIONSHIP

The Trent Woods Land Use plan is but a small part of the Craven County Land Use Plan. Communication has been maintained with Craven County and the City of New Bern in order to ensure conformity with the county plan. All of the land within Craven County and New Bern adjacent to Trent Woods is classified as Transition, the same classification as Trent Woods.

XI. PUBLIC PARTICIPATION

The town's Board of Commissioners is responsible for directing the town's public participation program. The purpose of the program was two-fold. It served as the key element in goals and objectives determination and made people aware of the overall purpose of the Coastal Area Management Act. Efforts were made to solicit participation from as many people as possible in the town's land use planning process.

The town developed a questionnaire and mailed it to ten percent (10%) of all water users. Of the 50 questionnaires mailed, 26 or 52% were returned. On the first page of the questionnaire, a brief description was given of the Coastal Area Management Act. From the results obtained from the public participation program, the Town Board decided to reaffirm its current development policies.

Public education and continual participation in planning matters are encouraged through regular meetings at the Trent Woods Town Hall. As a part of this update, the Town discussed the plan at five public meetings. Two of these meetings were attended by the Planning Board. The update was adopted at a public hearing. All Town Board and Planning Board meeting are regularly scheduled and public attendance is encouraged. The system of public participation has worked well in the past and will be continued.

CITIZEN'S OPINION QUESTIONNAIRE

In 1974, the North Carolina General Assembly passed the Coastal Area Management Act which is applicable only to the twenty eastern counties of North Carolina. It requires that Land Use Plans be prepared for guiding future growth in all

effected cities, towns and counties. Trent Woods is one of those effected towns.

The Act gives the Coastal Resources Commission or Craven County the authority to prepare a Land Use Plan for Trent Woods. The Act also requires that any new development within Tent Woods be consistent with the Land Use Plan.

The Town Board of Commissioners considers the planning required by the Coastal Management Act an opportunity for the town to development its own long range Land Use Plans and Policies consistent with the desires of its citizens. For this reason, the Trent Woods Town Board has chosen to develop its own Land Use Plan rather than have it prepared by someone else.

The current Land Use Plan was developed in 1975, updated in 1980 and must be updated again in 1985. It is important that the Board obtain the views of the community before any policy revisions are made. Accordingly, the questionnaire below is to be used as a main source of information for this update.

You were selected at random to participate in this survey. Please express your views by answering the questionnaire and returning it to the Town Hall. Also, public meetings will be held on this update at the Town Hall in the near future. You are invited to attend these meetings and express your views. If you have any questions concerning this questionnaire, please contact the Town Hall.

Thank	you	for	your	assistance.

	,	Agree		
		Disagree		
				No inion
1.	The Town has approximately 2,600 people in its planning area. When it is fully developed the current zoning density will allow approximately 5,000 people. This is a reasonable population for the Town's planning area.	91%	9%	0%
2.	The Town should discourage industry from locating in its planning area.	96%	4%	0%
3.	The Town should encourage only neighborhood commercial areas in its planning area.	96%	4%	0%
4.	The Town should continue to encourage low density residential development.	100%	0%	0%

5. The area in the Town currently zoned

	for condominium development should be buffered from single family units.	96%	0%	4%
6.	The Town should expend funds for public recreation areas.	52%	39%	9%
7.	Fire protection is adequate for the Town's planning area.	91%	0%	9%
8.	The Town needs a public sewage system which will eliminate the need for septic tanks.	83%	13%	4%
9.	The Town Zoning Ordinance requires low density residential throughout the Town except near the fire station. In this area, neighborhood commercial, condominiums and apartments are allowed. Condominiums and apartments are also allowed near Bangart School. This zoning pattern is appropriate for Trent Woods.	39%	61%	0%
10.	The Town should allow more mobile homes in its planning area.	0%	100%	0%
11.	The Town has a good zoning ordinance.	78%	18%	4%
12.	The Coastal Area Management requires that development in the coastal counties be consistent with Land Use Plans. Under these plans some people are not going to have complete freedom of what they do with their property. In the long run, the Coastal Area Management Act is going to benefit Coastal North Carolina.	78%	18%	4%
13.	to encourage low density residential, to discourage new mobile parks, to encourag only neighborhood commercial and to discourage industry from locating within its planning area. This development policy is valid and should continue in	e 100%	0%	0%
14.	The Town's 24-hour police protection program has been an asset to the Town.	91%	9%	0%
15.	Town zoning allows a density of approximately two (2) homes per acre. This density is too low and should be increased.	13%	87%	0%

- 16. The Town should develop policies which will encourage people not to build in areas subject flooding by hurricanes. 74% 17% 9%
- 17. The Town should continue the policy of surveying public attitude on major Town questions. 100% 0% 0%
- 18. The Town has installed a sufficient number of street lights to provide for the town's needs. 70% 26% 4%
- 19. What do you like best about Trent Woods?
- 20. What do you like least about Trent Woods?
- 21. What does Trent Woods need that it does not now have?
- 22. Do you have any comments or concerns not adequately covered by this questionnaire?

Name	
Address	

The following are questionnaire comments received. The number listed after each comment indicates the number of times that comment was repeated.

19. What do you like best about Trent Woods?

Beauty - 5 Quiet - 11 Clean - 2 Good location - 12 Friendly neighborhoods - 4 Single family housing - 1

20. What do you like least about Trent Woods?

Not enough street lights - 2
No public sewer - 4
Roads not wide enough - 1
Unleashed dogs - 7
No designated bike and running lanes - 1
Fast traffic on Country Club Road - 1
High water rates - 1
People burning trash - 1
Lack of 24 hour police protection - 1

Having to call sheriff to get police - 1 Mobile homes -1

21. What does Trent Woods need that it does not now have?

Public sewer system - 8
Dog control law enforced - 7
Designated exercise lanes - 1
Garbage and trash pick-up - 1
Post office - 1
Mail box - 2
Better drainage system - 1
More street lights - 2
Major roads wider - 1
Better 24 hour police protection - 1

22. Do you have any comments or concerns not adequately cover by this questionnaire?

No direct way for fire trucks to reach Wedgewood Drive.

Need a drop box for payment of water bill.

Need more involvement of residents in town meeting.

Too many limbs hanging over power lines that could cause trouble in wind storms.

Mail box needed

Dogs are a real problem.

No apartment or condominiums near schools.



DEPARTMENT OF THE ARMY

WILMINGTON DISTRICT, CORPS OF ENGINEERS P.O. BOX 1890 WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

November 27, 1985

Flood Plain Management Services Branch

Mr. Dexter Moore 3305 Winstead Road Rocky Mount, North Carolina 27801

Dear Mr. Moore:

This is in reply to your telephone request of November 22. 1985, for SLOSH information at Trent Woods in Craven County, North Carolina.

Enclosed is a copy of the MEOW (Maximum Envelope Of Water) map of the SLOSH results. This map represents a composite of the results of approximately 300 SLOSH runs of hypothetical storms approaching the area from five different directions and for five different hurricane intensities. Because of the lead time involved and the erratic nature of hurricanes, we eliminated the consideration of direction and mapped the inundation limits of the category 2, 3, and 5 intensities. Enclosed are copies of the Saffir/Simpson hurricane intensity scale and our news letters which should help explain what SLOSH is and some of the other terminology.

If we can be of further assistance in this or any other flood plain matter, please contact us.

Sincerely,

K. B. Old, Jr., P.

Chief, Flood Plain Management

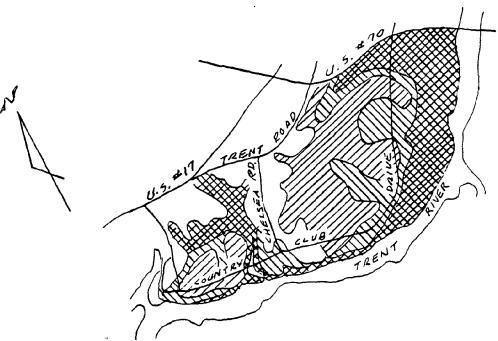
Services Branch

Enclosures

SLOSH MAP

Trent Woods Portion of Craven County

Prepared by the U.S. Army Corps of Engineers



Note: This map was drawn from a colored map furnished by the U.S. Army Corps of Engineers.

- Fifteen foot

- Fifteen foot contour area inundated by a category 4 & 5 storm.

- Twelve foot contour area inundated by a category 3 storm.

🕽 - Eight foot contour area inundated by a category 1 & 2 storm.

The preparation of this document was financed in part through a grant provided by the North Carolina Coastal Zone Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.

3.0 Background



3.1 SAFFIR/SIMPSON SCALE

Hurricanes, the greatest storms on Earth, are tropical cyclones in which winds reach a constant speed of at least 74 miles per hour (mph) and may gust to 200 mph. On the average their spiral clouds cover an area several hundred miles in diameter. The spirals are heavy cloud bands from which torrential rains fall. Tornado activity may be generated in these spiral cloud bands. They are unique in that the vortex or eye of the hurricane is deceptively calm and almost free of clouds with very light winds and warm temperatures. Outside the eye, their counterclockwise winds bring destruction and death to coastlines and islands in their erratic path.

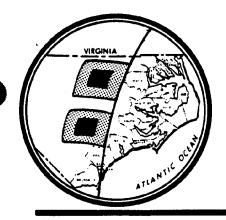
The Saffir/Simpson Scale is used by the National Hurricane Center to give public officials a continuing assessment of the potential for wind and stormsurge damage. Scale numbers are made available to public officials within 72 hours of storm landfall. Scale assessments are revised regularly as new observations are made.

TABLE 3-1
SAFFIR/SIMPSON SCALE

SCALE NUMBER	CENTRAL PR MILLIBARS	ESSURE INCHES	WINDS (MPH)	STORM * TIDE(FT)	DAMAGE
1	>980	>28.94	74-95	4-5	Minimal
2	965-979	28.50-28.91	96-110	5-7	Moderate
3	945-964	27.91-28.47	111-130	7-10	Extensive
4	920-944	27.17-27.88	131-155	9-13	Extreme
5	<920	<27.17	155 +	15 +	Catastrophic

^{*} Adjusted to Dade County using the 1983 U.S. Army Corps of Engineers Technical Data Report - (includes astronomical high tide).

The Saffir/Simpson Hurricane Scale was developed by Mr. Herbert Saffir, Consulting Engineer, Dade County, Florida and Dr. Robert H. Simpson, Simpson Weather Associates, Charlottesville, Virginia

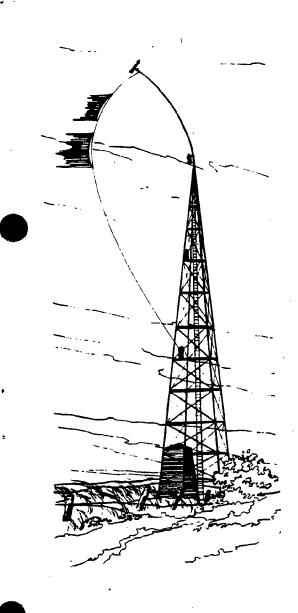


EASTERN NORTH CAROLINA HURRICANE EVACUATION STUDY

NEWSLETTER

Number 2

September 1985



This is the second in a series of newsletters designed to keep you informed on the progress of the Eastern North Carolina Hurricane Evacuation Study. We hope that by keeping you up-to-date on our progress, you will be able to help produce emergency plans that meet your hurricane evacuation needs. Please give us your suggestions.

On the last page of this newsletter is a list of names of people to contact if you have any questions or comments about any of the information contained in this newsletter.

STUDY EFFORT COMPLETES FIRST YEAR

June marked the end of the first year of our evacuation study effort. A great deal of work has been completed in this past year, a summary of which is presented in this newsletter. A much more detailed briefing on the results of all work efforts was given at four Disaster Preparedness Committee meetings held in June at Jacksonville, Washington, Roanoke Island, and Elizabeth City. At those meetings, the Corps of Engineers gave an overview of the study methodologies and progress to date. This was followed by presentations of the results of the Hazards Analysis and the Behavioral Analysis by representatives of The National Hurricane Center and Hazards Management Group, Inc., respectively. We hope that you were able to attend one of those very informative review meetings.

SPOTLIGHT....THE HUMAN FACTOR OF HURRICANE RESPONSE

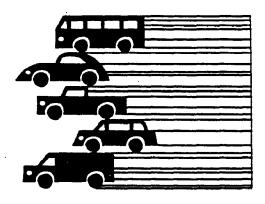
Because a hurricane can affect the lives of thousands, the way people react to hurricane threats is important in determining response requirements for coastal areas. Since evacuation is a primary form of response to hurricanes, critical items to measure are those human response factors that affect the time needed for evacuation.

To identify the type of human response information required, let's examine the portion of evacuation time most affected by human behavior -- the time required for threatened individuals to leave home and reach safe destinations. This "clearance time", as it is often called, begins when the first evacuating vehicle enters the roadway and ends when the last vehicle reaches its destination. It includes the time required by evacuees to secure their homes and prepare to leave (mobilization time); the time evacuees spend traveling along the road network (travel time); and the time spent by evacuees waiting along the road network due to traffic congestion (queuing delay time).

Human behavior affects these components of clearance time by influencing the number, timing, and duration of evacuation trips on the road network. The number of evacuation trips is affected by the percentage of people in risk areas who evacuate (that is, how many would leave or stay), and how many vehicles these evacuees use. The timing of when people make the decision to leave and the total number of vehicles used affect both the delays experienced entering the road network and the level of traffic congestion encountered during the evacuation. The duration of evacuation trips depends upon the level of traffic congestion and the evacuees destination, varying greatly with the type of refuge evacuees seek (public shelter, motel, home of a friend or relative) and the location of the refuge (local or out of town).

Clearance times also vary considerably with different threat situations, and with respect to what people believe they should do, based on information received from official sources.

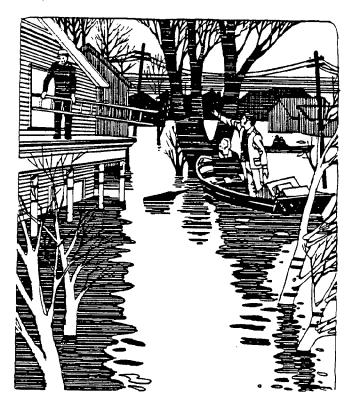
For these reasons, information on probable responses to hurricanes has been collected from existing behavioral studies and on-site sample surveys. From an analysis of this data, predictions have been made as to what people can be expected to do in a variety of situations. These predictions -- along with hazard, population, and traffic engineering data -- form the basis for computing clearance times.



Behavioral information is valuable to all agencies supporting an evacuation. For example, knowing how conditions will vary the demand on public shelters is useful for determining the adequacy of existing facilities, if additional shelters are needed, and for estimating manpower required for shelter management.

Local and State officials can also gain valuable insight into what motivates or deters people's response to evacuation information, which is helpful in emergency decision-making and public awareness efforts. For example, if the Behavioral Analysis shows that a low percentage of people will evacuate from high or moderate risk areas, then expanded public awareness efforts may be necessary to let these people know of their potential risk. On the other hand, if the results of interviews with persons living in low risk areas show that those people intend to evacuate in large numbers, then public awareness efforts aimed at reducing that response rate may be required in order to avoid unnecessary highway congestion and demand on sheltering resources.

Thus, the benefit of knowing what people intend to do in hurricane situations goes beyond just defining input for subsequent tasks of the hurricane evacuation study. It provides direction for pursuing possible ways to improve human response in future hurricane threats.



HAZARD ANALYSIS

The National Hurricane Center has completed the SPLASH and SLOSH computer modeling of the coastal areas of North Carolina. Based on the results of that modeling, the Corps of Engineers completed an evaluation of the hurricane vulnerability of those coastal areas. The findings were presented to State Division of Emergency Management officials at two meetings in March and April. At those meetings, decisions were made by State officials that reduced the 25 original hurricane parameter combinations (5 approach directions combined with 5 Saffir/ Simpson intensity categories) to 3 evacuation decision-making situations. Consideration of approach direction was eliminated, and the 5 intensity categories were grouped into categories 1 & 2, 3, and 4 & 5. The basis for these decisions was explained at the June Disaster Preparedness Committee meetings.

Areas exposed to freshwater flooding from rainfall runoff have been identified by the county Emergency Management Coordinators and located on maps. While usually not life threatening in coastal areas, rainfall flooding accompanying a hurricane can render low lying roadways or intersections useless for evacuation. Knowing what roads may be affected is critical in developing feasible evacuation road networks.

VULNERABILITY ANALYSIS

Most of the work effort devoted to this task centered on assembling and evaluating information needed to determine the number of persons at risk.

Surge heights from the hurricane surge analysis described in the previous section were mapped on 1:250,000 scale maps. Then flooded areas that will result from those surge heights were delineated on topographic maps. The surge height and flooded area maps were reviewed with the 18 county Emergency Management Coordinators at the recent Disaster Preparedness Committee meetings. Copies of the flooded area maps have been furnished to the respective county coordinators for use this hurricane season.

Evacuation scenarios and evacuation zones were also discussed at those meetings. These are important components for calculating evacuation times and will be closely coordinated with emergency management officials. Each evacuation scenario will define a level of threat. or risk area to be evacuated, according to the 3 combinations of storm intensity categories described in the previous section. From this, the population-atrisk will be identified, forming the basis for calculating clearance times. Evacuation zones will subdivide these risk areas into smaller units to help transportation planners model traffic movements more accurately.

Population data from the 1980 Census were obtained and assembled. This information, which included data on the number of vehicles and dwelling units (by type), was the basis for making 1986 population projections. In addition, seasonal and non-seasonal tourist population figures were assembled from a number of private and public sources.

Lists of hospitals, nursing homes, and other institutions were obtained from State of North Carolina Department of Human Resources officials and were located on topographic maps. Those facilities lying in areas of risk will have floor elevations established by field surveys and their evacuation needs assessed.



BEHAVIORAL ANALYSIS

Hazards Management Group, Inc., under contract with the Corps of Engineers, has completed the Behavioral Analysis for the evacuation study. A preliminary draft of the Behavioral Analysis Report, finished in January, was reviewed by Federal Emergency Management Agency. State Division of Emergency Management, and Corps of Engineers officials. Based on comments received, a final draft of the report was completed in April and was reviewed by those same agencies, along with all 18 county Emergency Management Coordinators, prior to the June Disaster Preparedness Committee meetings. The report was approved by the Corps of Engineers in July.

The report's conclusions and recommendations were presented at the June meetings. Here are the major findings that governed the development of behavioral predictions:

- * Factors that will influence the number of people evacuating and when they will leave are where people live within a risk area, their perception of the hurricane's threat, and, most importantly, what they are told to do by public officials.
- * The type of refuge the evacuees will seek and its location will depend upon the severity of the storm, whether the person lives in a high or low risk area, availability of safe refuge, evacuee's income, and the amount of response time available.

SHELTER ANALYSIS

The Corps of Engineers has obtained existing public shelter inventories for all study area counties from the county Emergency Management Coordinators. These facilities have been located on topographic maps. Those vulnerable to flooding will have first floor elevations determined by field surveys.

TRANSPORTATION ANALYSIS

Work on this element of the evacuation study is scheduled to begin in September and a great deal of administrative work has been completed. Since most of the work will be done by a transportation consultant, a scope of work is being prepared describing the specific tasks and services needed to complete the analysis. The Corps of Engineers began advertising for interested firms in early July, and the firm that will do the analysis will be selected soon. Representatives from that firm will meet with county Emergency Management Coordinators and other interested parties to explain the study procedure and gather needed information. The Transportation Analysis will take several months to complete. Conclusions drawn from the analysis will be presented at another series of Disaster Preparedness Committee meetings.

FUTURE PLANS/ACTIVITIES

At the conclusion of the Transportation Analysis, the Technical Data Report, describing how the study was performed and giving the study results, will be finalized. The N.C. State Division of Emergency Management, Federal Emergency Management Agency, and Corps of Engineers will then assist the county Emergency Management Coordinators with preparing evacuation plans, and the study effort will culminate with a hurricane evacuation exercise conducted by the N.C. Division of Emergency Management. Products of completed study analyses are presently available to Emergency Management officials for interim evacuation planning.

All information, comments or questions Disaster Preparedness Committee members or other interested parties may have can be directed to the following individuals.

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